Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of the Claims:

CLAIMS

1.   (Original) A method comprising:

selecting a set of one or more original ordered sequences the set of ordered sequences having at least one desired property;

creating a set of extended sequences, each based on an original ordered sequence by beginning with an element of an original sequence, cyclically appending elements of the original sequence in order to obtain a desired extended sequence length, and

modifying each extended sequence using a corresponding modifying sequence,

such that a training sequence can be generated from any one of the modified extended sequences by beginning with any one element of any one modified extended sequence and taking each element of the any one sequence in order to obtain the training sequence, the modifying sequence being selected so

that the obtained training sequence when modulated by a selected modulation

format has the at least one desired property of the corresponding original

ordered sequence.

2.   (Currently Amended) The method of claim 1, wherein the desired

extended sequence length is the length of the training sequence plus the number

of the element of the modified extended sequence where the generation of the

training sequence begins.

3.   (Original) The method of claim 1, wherein the one desired property

comprises a function of the autocorrelation of any original sequence in the set of

original sequences being below a threshold value.

4.   (Currently Amended) The method of claim 1, wherein the original

ordered sequences have a cross-correlation property further comprising

generating further training sequences from the any one sequence by beginning

with other elements of the any one sequence and wherein the modifying

sequence is selected so that the training sequence and the further training

sequences when modulated by the selected modulation format have the cross-correlation property.

5.   (Original) The method of claim 1, wherein the one desired property comprises a function of the cross-correlation of any original sequence in the set of original sequences with any other original sequence in the set of original training sequences being below a threshold value.

6.   (Currently Amended) The method of claim 1, wherein the original sequence comprises a sequence of complex numbers corresponding to phase shifts employed by a the modulation format used to transmit a the training sequence.

7.   (Currently Amended) The method of claim 1, wherein the modifying sequence comprises a sequence of complex numbers, and forming a the modified extended sequence comprises multiplying each element of the extended sequence by a corresponding element of the modifying sequence.

8.   (Original) The method of claim 7, wherein the modulation format is a π/M – MPSK modulation format.

9.   (Original) The method of claim 8, wherein the modifying sequence comprises pairs of equal complex numbers, such that each complex number pair is equal to the previous complex number pair multiplied by $\exp(j2\pi/M)$

10.   (Original) The method of claim 1, wherein the modulation format is a $\pi/2$ – 2PSK modulation format.

11.   (Original) The method of claim 10, wherein the original sequence comprises a sequence of binary symbols.

12.   (Original) The method of claim 11, wherein the modifying sequence performs a binary complement operation on every other pair of elements of the extended sequence.

13.   (Original) The method of claim 1, wherein selecting a set of original ordered sequences comprises selecting a family of Gold sequences.

14.   (Currently Amended) An apparatus comprising:

a data store having stored therein a plurality of ordered sequences for use in generating a training ~~sequences~~ sequence~~,~~; and

a processor to generate the training sequence ~~wherein a training sequence is generated~~ by taking a number of elements of one of the plurality of ordered sequences in order, wherein ~~the training sequence has at least one desired property when used by a peak to average power constrained modulation format~~ a function of the autocorrelation of the training sequence is below a threshold value.

15.   (Canceled)

16.   (Currently Amended) The apparatus of claim 14, wherein ~~the one desired property comprises a function of~~ the cross correlation of ~~a~~ <u>the</u> training sequence with any other training sequence is below a threshold value.

17.   (Original) The apparatus of claim 14, wherein the length of the plurality of ordered sequences is the length of the training sequence plus the index of the element of one of the plurality of training sequences which is the initial element of the training sequence.